

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
MARSHALL DIVISION**

INTELLECTUAL VENTURES II LLC,

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Plaintiff,

v.

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SPRINT SPECTRUM L.P., NEXTEL
OPERATIONS, INC., ERICSSON INC.,
TELEFONAKTIEBOLAGET LM ERICSSON,
and ALCATEL-LUCENT USA INC.,

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Defendants.

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T-MOBILE USA, INC., T-MOBILE US, INC.,
ERICSSON INC., and
TELEFONAKTIEBOLAGET LM ERICSSON,

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Defendants,

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v.

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NOKIA OF AMERICA CORPORATION,

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Intervenor.

Civil Action No. 2:17-cv-662-JRG

LEAD

JURY TRIAL DEMANDED

Civil Action No. 2:17-cv-661-JRG

JURY TRIAL DEMANDED

**PLAINTIFF INTELLECTUAL VENTURES II LLC'S
OPENING CLAIM CONSTRUCTION BRIEF**

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I. INTRODUCTION

Plaintiff Intellectual Ventures II LLC (“IV”) submits this brief in support of its proposed claim constructions. The claim terms at issue are, with few exceptions, straightforward terms that would be understood by a person of ordinary skill in the context of the patents and their prosecution histories. Each of IV’s proposed constructions is fully supported by the intrinsic evidence as well as the canons of claim construction.

II. OVERVIEW OF THE TECHNOLOGY

A. U.S. Patent Nos. 8,682,357 and 9,532,330

U.S. Patent No. 8,682,357 (the “’357 Patent”) is the parent of U.S. Patent No. 9,532,330 (the “’330 Patent”). *See generally* Ex. 1¹ (’330 Patent), Ex. 2 (’357 Patent). Both patents share nearly identical specifications and concern similar inventions.²

In telecommunications systems, “paging” is the process of waking up a mobile device from a sleep state. ’330 Patent, 1:37-38. The ’357 and ’330 Patents claim new processes for two-stage paging of an idle handset. *See, e.g., id.* at Abstract, cls. 1-34. As explained in the specification, prior art paging systems suffered from a number of technical challenges. *Id.* at 2:05-13, 2:27-29. In those systems, idle handsets would continually monitor transmissions awaiting a paging signal from the network, which drained each handset’s power consumption. *Id.* at 2:05-13. If the handset detected a paging signal, it would then look for a second paging signal at a predetermined frequency and time, sometimes based on a “fixed time offset” known to all handsets in the network. *Id.* at 2:05-13, 2:27-29. Such systems were inflexible, and had no

¹ “Ex. __” refers to the exhibits to the Patel Declaration filed concurrently herewith.

² Because the specifications of the ’357 and ’330 Patents are nearly identical, citations are only to the ’330 Patent.

ability to adjust if the paging signal’s assigned allocation was subject to, for example, signal fading and interference.

The ’357 and ’330 patents teach improved paging processes, and in particular, the specification discusses “[t]hree different implementations of two-stage paging,” as identified in Figures 7-9. *See id.* at 6:12-16, Figs. 7-9. “Implementation 3,” discloses specific improvements over prior art two-stage paging processes, including (1) the use of periodic monitoring, and (2) flexibility in transmitting the second paging signal. *See, e.g., id.* at 6:63-7:15, Fig. 9, cl. 26. In this embodiment, each handset periodically monitors transmissions from a base station. *Id.* at 7:03-05. To initiate paging, the base station sends a first paging signal that “indicates the resources allocated for a corresponding SCH channel, which carries [paging signal 2]” to a group of idle handsets. *Id.* at 7:07-10. By allowing the base station to select an allocation of resources which carries the second paging signal, the patents provide a novel alternative to the prior art’s use of a fixed allocation of resources or a “fixed time offset.” *Id.* If a handset belongs to the group of handsets which received the first paging signal, it “reads the allocated [shared channel] for its paging message” to determine whether it is to awaken from its idle state. *Id.* at 7:10-12. The system can pick the frequency and time of transmission for the second paging signal to maximize the chance that the second paging signal will get through to the receiver.

B. U.S. Patent Nos. 9,320,018 and 9,681,466

U.S. Patent No. 9,320,018 (the “’018 Patent”) is the parent of U.S. Patent No. 9,681,466 (the “’466 Patent”). *See generally* Ex. 3 (’018 Patent), Ex. 4 (’466 Patent). The two share nearly identical specifications and concern similar inventions.³

³ Because the specifications of the ’018 and ’466 Patents are nearly identical, citations are only to the ’018 Patent.

The '018 and '466 patents describe how to schedule uplink data transmissions in a wireless network. In cellular communications systems, communication from a user equipment ("UE") to a network device (a base station, e.g. a "Node B" or "eNodeB" on a cell tower) is known as uplink, while communication from the base station to a UE is known as downlink. '018 Patent at 1:36-38. In prior art 3G systems, "the base station or 'Node-B' is responsible for allocating and distributing the resources to the users, within a so-called scheduling task." *Id.* at 2: 49–52. Although different types of digital data packets (e.g., HTTP and FTP traffic) may have had different quality of service ("QoS") requirements, *id.* at 3:25–31, Ex. 5 at IVIPW00042156, 3G systems could not differentiate between them when a single UE had more than one type of traffic, because the NodeB gave a single data allocation to each UE. '018 Patent at 2:48–57. The '018 and '466 inventors improved scheduling efficiency in wireless networks with a new process for the UE to allocate uplink resources between different types of data using different "radio bearers." *Id.* at 3:1–9, 5:58–60, 9:11–28, 9:63–10:08, Abstract.

As illustrated in Figure 5, the network device sends first weighting parameters for different radio bearers to a UE, where radio bearers are used for different services (e.g., HTTP or FTP traffic). '018 Patent at Fig. 5 Step Nos. 515, 555; 9:21–28, 9:46-49, 9:55–62. The UE then may send back indications of the amount of data ready for uplink ("buffer occupancies") for each radio bearer. *Id.* at 9:60-62. The network device then sends a message with a single uplink resource allocation to the UE. *Id.* at Fig. 5 Step No. 560; 9:60-10:4. Once the UE receives this allocation message, it performs its own uplink allocation using the weighting parameters to split the resources between different radio bearers. *Id.* at Fig. 5 Step No. 525; 9:38-42. One way to allocate resources between the radio bearers is described in Figure 6. *See also id.* at 10:37–12:14. The UE then transmits the allocated data back to the network device. *Id.* at Fig. 5 Step

No. 535; 9:38-10:08.

C. U.S. Patent No. 8,897,828

The '828 patent claims technology for controlling the power level at which a UE transmits signals in the uplink direction to a base station. Ex. 6 ('828 Patent) at 7:03-8:11, Fig. 3. It is important to control the UE transmit power because it may not reach the base station if it is too weak, and it could interfere with other signals if it is too strong. *Id.* at 1:17-40. The asserted claims are drawn to systems and methods for adjusting the UE transmit power by: (1) providing feedback from the base station to the UE in the form of TPC commands that call for increasing or decreasing the UE power level; and (2) transmitting reference signals and associated information from the base station to the UE to allow for a determination of “path loss,” which is used to make further adjustments to the UE power level in order to compensate for signal attenuation over the wireless transmission path. *Id.* at 4:35-61, 5:66-6:05, 7:63-8:03, 11:64-12:14.

In the claimed inventions, the base station and UE may operate in a mode in which TPC commands are accumulated, or in different mode in which the TPC commands are not accumulated *Id.* at Abstract, Figs. 3-4, 7:16-19, 8:66-9:15, 9:55-10:14, 11:19-25,13:37-55. In the accumulation mode, the UE accumulates values carried by multiple TPC commands, and adjusts the transmit power by the accumulated sum. *Id.* For example, assuming the accumulated value starts at zero, and two different TPC commands carrying values of +1 and +2 are received in series, then the power will be adjusted by the accumulated value of +3. In the non-accumulation mode, the UE does not accumulate TPC command values, and simply adjusts its transmit power by whatever value the present TPC command specifies. *Id.* In both modes, the UE transmit power is further adjusted based on path loss. *Id.*

Another important aspect of the claimed invention is the use of a “single physical channel” to send both an allocation of a scheduled uplink resource and a TPC command. *Id.* at Abstract, 12:44-49. Unlike prior art systems that used two separate channels to carry allocation information and TPC commands, the “single physical channel” can carry both, thereby providing an advantage of reduced “signaling overhead.” *Id.* at Abstract, 12:39-54.

D. U.S. Patent No. 8,953,641

U.S. Patent No. 8,953,641 (the “‘641 Patent”) discloses a broadband wireless communication system that permits handsets to roam between base stations even when the base stations use different bandwidths for transmission. By defining a core-band and a variable number of subcarriers in a multi-carrier communication system, the invention allows the use of flexible, variable bandwidth base stations in a wireless network, thereby more efficiently utilizing radio frequency spectrum. Ex. 7 (‘641 Patent), Abstract, 1:31-2:03. The variable channel bandwidth is constructed by “adjusting the number of usable subcarriers.” *Id.* at 4:25-26. “[T]he number of subchannels can be adjusted to scale the [variable bandwidth (VB) wireless] channel in accordance with the given bandwidth. In such realization, a specific number of subchannels, and hence the number of usable subcarriers, constitute a channel of certain bandwidth.” *Id.* at 4:31-35.

The specific signaling and control methods needed for a wireless device to operate in a variable bandwidth environment are realized by using a core-band. *Id.* at 4:62-66. “[The] core-band, substantially centered at the operating center frequency, is defined as a frequency segment that is not greater than the smallest operating channel bandwidth among all the possible spectral bands that the receiver is designed to operate with.” *Id.* at 4:66-5:03. The core-band is used by a wireless device entering a geographic area “to initiate communication and obtain essential information and subsequently switch[]” a mobile station’s operating bandwidth to the “full

operating bandwidth of the area for the remainder of the communication.” *Id.* at Abstract. This allows “[a] broadband wireless communication device to be able to roam from one part of the world to another.” *Id.* at 1:31-34.

III. ARGUMENT

A. “the message having an allocation of resources for a shared channel and a radio network temporary identity (RNTI) associated with a plurality of UEs including the UE” — ’357 Patent, claims 11, 30, and 47

IV’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, the message conveying an allocation of resources for a shared channel and conveying a radio network temporary identity (RNTI) associated with a plurality of UEs including the UE	“the message having an allocation of resources for a shared channel and an allocation of a radio network temporary identity (RNTI) associated with a plurality of UEs including the UE”

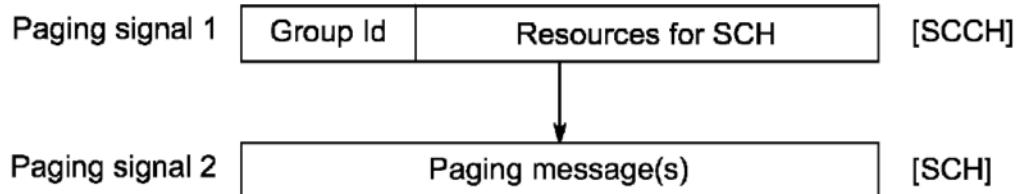
This term should be given its plain meaning and no construction is required. Nothing in the specification or prosecution history compels a departure from that meaning. *Thorner v. Sony Computer Entm’t Am. LLC*, 669 F.3d 1362, 1365 (Fed. Cir. 2012)). To the extent a construction is required, the Court should adopt IV’s proposed alternative construction, which substitutes the word “conveying” for “having” and adds clarity.⁴

Defendants’ construction imposes limitations not required by the plain language or intrinsic record and is antithetical to the precepts of English grammar. *See In re Hyatt*, 708 F.2d

⁴ There is no difference in meaning, although the specification often uses the term “convey” when describing the transmission of information from the RAN (or base station) to user equipment. *See, e.g.*, ’357 Patent, 4:27-29 (“Specific information required by the UE for correction transmission/reception over the SCHs is **conveyed** from RAN to UE over the SCCHs.”); 3:21-29 (“The paging message may be **conveyed** to the UE...”); 10:22-28 (“a user equipment can be configured to receive (401) from a base station a network-initiated connection establishing message **conveying** a unique identifier of the user equipment, a temporary identifier which is different from the unique identifier, and an indication of an allocation of dedicated physical resource...”), 10:67-11:5, Figs. 15 and 16 (all emphasis added).

712, 714 (Fed.Cir.1983). The plain language of the term is in the form of a list where the “message” conveys (a) “an allocation of resources for a shared channel” and (b) “a radio network temporary identity (RNTI) associated with a plurality of UEs including the UE.” Defendants’ proposal distorts the plain meaning of the term by inserting the words “an allocation of” in a way which appears to be designed to shift the meaning in some unstated fashion. There is no support in the specification for sending “an allocation of RNTI.” The “I” in “RNTI” stands for identity, which is what is sent to the handset. It is unclear what an allocation of an identity is, and Defendants do not say.

On the other hand, the specification is replete with discussion of transmitting an “allocation of resources.” *See, e.g.*, ‘357 Patent at 8:55-56, 9:25-26, 9:59-10:01, 10:15-19, 10:23-28, 10:37-40, 10:59-62, 11:01-05, Figs. 5, 9, 13-16. Various figures, such as Figure 9 (reproduced below), depict the transmission of an exemplary identifier (*e.g.*, “Group ID”) and an allocation of resources for a shared channel, consistent with the plain language of the claim.



'357 Patent, Figure 9

See also id. at 6:58-63 (describing Fig. 9: “[t]he message part of the SCCH indicates the resources allocated for a corresponding SCh channel, which carries the paging message(s)(paging signal 2”). The text and figure distinguish between the allocation of resources and transmission of an identity. While both are transmitted, it is wrong to refer to the transmission of the RNTI as “an allocation of an RNTI”.

Moreover, if the patentee had intended to modify both items in the list with “an allocation

of' as Defendants suggest, then the dependent claims would have been written differently. The subsequent limitations referring to resources refer to the "allocation" of the resources, while those that refer to the RNTI simply call it "the RNTI", rather than "the allocation of the RNTI". *Compare* '357 Patent, cls. 17, 36, and 53 ("wherein **the RNTI** is cell-specific"); cls. 18 ("wherein **the RNTI** is received by the second network device..."); cl. 37 ("wherein **the RNTI** is received by the network device") *with id.* at cls. 11, 30 ("sending...a paging message in **the allocated resources for the shared channel**'"); cl. 47 ("receiving...a paging message in **the allocated resources for the shared channel**'") (all emphasis added). The patentee did not intend the claims to be read as requiring "an allocation of an RNTI".

Defendants' construction is similar to Palomar's flawed approach in *Candela Corp. v. Palomar Med. Techs., Inc.*, No. CIV.A. 9:06-CV-277, 2008 WL 3285255 (E.D. Tex. Aug. 6, 2008). In that case, the parties disputed the following term, also in the form of a list:

"generating a beam of radiation having a wavelength of between 1.3 and 1.8 microns and a fluence of between 10 and 150 joules per square centimeter..."

Palomar sought a construction that, in effect, modified both items in the above list with the term "wavelength." *Id.* at *3-4. In rejecting this proposal, this Court found that "Palomar's suggestion that the fluence must be within the wavelength range [was] contrary to [the] plain meaning and [found] little, if any, support in the specification." *Id.* at *4 (further noting that Palomar's approach "[did] not seek to construe any word," but rather "attempt[ed] to limit the terms as much as possible by inserting additional words."). Just like in *Candela Corp.*, Defendants' construction is at odds with the intrinsic record and basic rules of English grammar. For these reasons, IV respectfully requests that the Court reject Defendants' construction in favor of the plain and ordinary meaning.

B. “the signal” — ’330 Patent, claims 1, 8, 9, 17, 18, 25, 26, and 34

IV’s Proposed Construction	Defendants’ Proposed Construction
For claims 1, 8, 18, 25: Plain and ordinary meaning, the signal to indicate a page of the UE	For claims 1, 8, 18, 25: “the signal that (1) indicates a page of the UE and (2) includes an indication of the shared channel for the UE to receive”
For claims 9, 17, 26, 34: Plain and ordinary meaning, the signal to indicate a page from the network device	For claims 9, 17, 26, 34: “the signal that (1) indicates a page from a network device and (2) includes an indication of the shared channel”

The parties do not dispute that “the signal” derives antecedent basis from a preceding step or element in each of independent claims 1, 9, 18, and 26. Each of these claims first introduces “a signal” in language involving sending or monitoring for “a signal to indicate a page [of the UE/from a network device].” *See* ’330 Patent, cls. 1, 9, 18, and 26. IV’s proposed construction—“a signal to indicate a page [of the UE/from the network device]”—acknowledges this antecedent relationship and is consistent with the plain language.

Defendants’ proposal, on the other hand, muddies the term in two ways: (1) by substituting “that indicates” with “to indicate,” and (2) by repeating language from elsewhere in the claim. First, instead of proposing an exact recitation of the antecedent basis (i.e., “the signal to indicate a page”), Defendants’ modify the plain language of the claim (“the signal that (1) indicates a page...”). If Defendants intend some difference, they should have articulated it in their construction. Second, there is no reason to repeat the language, “the signal includes an indication of a shared channel for the UE to receive,” which immediately precedes the disputed term. *See id.*, cls. 1, 18. Rather than clarifying the term for the jury, Defendants’ proposal introduces the potential for confusion.

The purpose of claim construction is to “determin[e] the meaning and scope of the patent claims asserted to be infringed.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 976 (Fed.

Cir. 1995), *aff’d*, 517 U.S. 370 (1996). During the *Markman* phase, courts often ask whether a construction is helpful or “unhelpful for the jury to understand the term,” and also whether the “claim language itself … provides more guidance than [a proposed construction].” *Apple, Inc. v. Samsung Elecs. Co.*, No. 11-CV-01846-LHK, 2012 WL 2993856, at *6 (N.D. Cal. July 20, 2012). Here, the plain language of the claim provides more guidance than Defendants’ proposal which offers nothing beyond a grammatically incorrect repetition of the claim language. When inserted into representative claim 9, for example, it becomes obvious that Defendants’ construction injects confusion rather than clarity:

9. A user equipment (UE) comprising:
 - a processor configured to monitor, in a long-term evolution (LTE) network, downlink transmissions for *a signal to indicate a page from a network device, wherein the signal includes an indication of a shared channel and [the signal that (1) indicates a page of the UE and (2) includes an indication of the shared channel for the UE to receive]* is derived from a radio network temporary identifier (RNTI); and
 - circuitry configured to receive a transmission on the indicated shared channel.

There is no reason to repeat language that appears within the same claim limitation (shown in italics above), as Defendants propose. *See, e.g., U.S. Surgical Corp. v. Ethicon, Inc.*, 103 F.3d 1554, 1568 (Fed. Cir. 1997) (explaining that claim construction “is not an obligatory exercise in redundancy”); *800 Adept, Inc. v. AT & T Mobility, LLC*, No. 5:07CV23, 2008 WL 4831093, at *10 (E.D. Tex. July 23, 2008) (“where additional language may be … redundant, it is in the court’s power to determine that no construction is necessary.”). The plain language of the claim is readily understandable; “the signal” refers back to “a signal”—the only “signal” recited in the claims at issue. *See Commonwealth Sci. & Indus. Research Organisation v. Lenovo (United States), Inc.*, No. 6:09CV399, 2011 WL 13134622, at *6 (E.D. Tex. Oct. 12, 2011) (finding in a claim at issue that “[s]aid data’ references back to ‘data’ and is readily

understandable"). For these reasons, IV respectfully requests that the Court reject Defendants' construction.

C. **"wherein allocation of resources for the data of each channel of a radio bearer having a second parameter above zero is provided before another channel's data for transmission having a third parameter less than or equal to zero"—'018 Patent, claims 12, 16, and 20, and similar terms in '018 Patent claim 24 and '466 Patent claims 1, 4, and 9**

IV's Proposed Construction	Defendants' Proposed Construction
<p>Plain and ordinary meaning, wherein allocation of resources for the data of each channel of a radio bearer having a second parameter above zero is provided before the allocation for another channel's data for transmission having a third parameter less than or equal to zero</p>	<p><u>Defendants' construction for claims 12, 16, and 20 of the '018 Patent and 4 and 9 of the '466 Patent:</u> "wherein allocation of resources for the data of each channel of a radio bearer having a second parameter above zero must be provided for transmission of that data before another channel's data having a third parameter less than or equal to zero," or alternatively, indefinite</p> <p><u>Sprint's and T-Mobile's construction for claim 24 of the '018 and claims 1 and 6 of the '466 Patent</u>⁵: "wherein resources must be allocated such that transmission of the data of each channel [of a radio bearer] having a second parameter above zero takes place before transmission of data of another channel [of a radio bearer] having a third parameter less than or equal to zero," or alternatively, indefinite"</p>

Defendants requested that similar terms from '018 Patent claims 12, 16, 20, and 24 and the '466 Patent claims 1, 4, and 9 be construed together. There are four such terms, which for convenience are referred to as Terms A, B, C, and D below. Term A in claims 12, 16, and 20 of the '018 Patent is:

⁵ Claim 24 of the '018 Patent and claims 1 and 6 of the '466 Patent are not asserted against Ericsson, Nokia, or ALU.

... wherein allocation of resources for the data of each channel of a radio bearer having a second parameter above zero is provided before another channel's data for transmission having a third parameter less than or equal to zero . . .

Term B in claims 4 and 9 of the '466 Patent, showing changes from Term A, is:

... wherein allocation of resources for the data of each channel ~~of a radio bearer~~ having a second parameter above zero is provided before prior to another channel's data for transmission having a third parameter less than or equal to zero . . .

Term C in claim 24 of the '018 Patent, showing changes from Term A, is:

... wherein ~~allocation of~~ resources are allocated for ~~the~~ data of each channel of a radio bearer having a second parameter above zero ~~is provided~~ before another channel's data for transmission having a third parameter less than or equal to zero . . .

Term D in claims 1 and 6 of the '466 Patent, showing changes from Term A, is:

... wherein ~~allocation of~~ resources are allocated for ~~the~~ data of each channel ~~of a radio bearer~~ having a second parameter above zero ~~is provided~~ before prior to another channel's data for transmission having a third parameter less than or equal to zero

Each of these claim terms describe an action—the allocation of resources—performed by the user equipment for uplink. Terms A and B describe the UE's action from the point of view of the network, for both method and device claims:

“wherein allocation of resources for [one set of data] is provided before (or prior to) [another set of data].”

Terms C and D describe the UE's action from the point of view of the UE, also for both method and device claims:

“wherein resources are allocated for [one set of data] before (or prior to) [another set of data].”

However, the meaning is the same regardless whether the claims are for a UE or for a network/network device.

Although prior art systems “contain[ed] schedulers that control when the individual data packets are transmitted,” ‘018 Patent at 2:58–59, the claimed invention of the ‘018 and ‘466 Patents has a more complex scheduling method that depends in part of the uplink resources requested by the UE for two or more bearers. *See, e.g., id.* at 9:38–42. Accordingly, the plain meaning of the terms distinguishes the allocation of resources for one set of data (“the data of each channel of a radio bearer having a second parameter above zero”) from the allocation of resources for another set of data (“another channel’s data for transmission having a third parameter less than or equal to zero ”). The words at the start of the term, “wherein allocation of resources,” indicate that the scheduler at the UE is engaged in setting the relative priority of these two sets of data. IV’s proposed construction makes clear that this term imposes a limitation on the allocations of both the sets of data, such that one allocation must be provided before another:

“wherein allocation of resources for [one set of data]
is provided before allocation of resources for [another set of data].”

(underlining IV’s clarifying construction). The allocation is a logical function performed in the software and gives priority to one set of data over the other.

The specifications provide numerous examples showing that the patents concern the priority of allocation, not the order of transmission. For instance, the specifications describe embodiments that contain:

- “prioritization logic arranged to **prioritize the allocated resource** across multiple wireless communication units,” ‘018 Patent at 3:22–24;
- “prioritization logic [that] **allocates bandwidth resource to individual radio bearers** according to a set of weight values,” which “allows a **proportion of the resource to be allocated** to particular radio bearers,” *id.* at 4:11–13, 15–16;
- “takes the single physical allocation and **splits it between different RBs using the weight [] values**,” *id.* at 9:38–45; and

- “Separate indication of **allocation for each logical channel** to UTRAN side MAC,” *id.* at Fig. 4 ref. 480

(all emphasis added); *see also id.* at 10:28–30, 10:37–40.

Further, Figures 5 and 6 and the textual descriptions disclose how a UE prioritizes allocation for sets of data queued for different channels, not some specific order of transmission. This involves a first parameter S_{tier} (step 555) or S_q (step 605) for each queue, an allocation message with a single allocation of physical resources FreeRAAU (step 560, 610), and the allocation of those resources among different queues (steps 525, 620) using a parameter for each queue, $RAAU'_q$. *See* ‘018 Patent at Fig. 5, Fig. 6; *see also id.* at 9:21–28; 9:55–10:18, 10:37–12:14. This allocation does not concern the order of transmission, as the data for the various radio bearers is transmitted “at a single instant of time.” ‘018 Patent at 10:37–40.

In contrast, Defendants’ proposed constructions add an additional limitation—the sequential order of transmission—that has no support in the language of the claims. While it is true that the claims include the phrase “for transmission,” the placement and grammar of that phrase in the claim sentence makes it clear that “for transmission” is a characteristic of the second set of data; that is, the phrase simply modifies “another channel’s data [for transmission] having a third parameter less than or equal to zero.” The data of the other channel must be data “for transmission” from the user equipment to the network (i.e., for uplink). The grammar of the sentence does not permit the words “for transmission” to modify both the first set of data and the other set of data, nor permit those words to impose a new limitation that the uplink transmission happen in any specific order.

Further, Defendants’ proposed new limitation finds no support in the specification. As illustrated in the bullet points above, the specification consistently speaks of the priority of allocations, not the order of transmissions. Nothing in the specification dictates that data must be

transmitted in any specific order. No portion of the specification states that transmission of specific data must take place “before” or “prior to” the transmission of other specific data. To the contrary, the specification provides an embodiment in which multiple queues are served “at a single instant of time.” *Id.* at 10:37-40.

Defendants argue, alternatively, that the claims are indefinite. But the language of the claim is clear: allocation of resources for a first set of data must be provided before allocation of resources for a second set of data. A person of ordinary skill in the art would know that these claim terms concern the priority of allocation, based both on the plain language of the claims and the ’018 and ’466 Patent specifications.

D. “wherein the received data includes data of others of the plurality of radio bearers”—’018 Patent, claims 14, 18, and 22

IV’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, wherein the wireless network receives data of two or more radio bearers other than the radio bearer with a channel having the second parameter above zero	Indefinite.

Defendants assert that claims 14, 18 and 22 are indefinite. Definiteness is always to be evaluated from the perspective of someone skilled in the relevant art at the time the patent was filed. *Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2128 (2014). The claims, read in light of the specification and prosecution history, must inform those skilled in the relevant art of the scope of the invention with reasonable certainty. *Id.* at 2129. To determine whether a particular term is indefinite, “one must bear in mind...that patents are not addressed to lawyers, or even to the public generally, but rather to those skilled in the relevant art.” *One-E Way, Inc. v.*

Int'l Trade Comm'n, 859 F.3d 1059, 1063 (Fed. Cir. 2017) (quoting *Nautilus*, 134 S. Ct. at 2128-29). Here, one of skill in the art would be able to parse the claims and understand their scope.

The relationship between independent/dependent claims 12/14, 16/18 and 20/22 is the same. Representative claims 12 and 14, including an example with four bearers, is described below (emphasis added):

12. A method performed by a wireless network, the method comprising:
 - [a] sending, by the wireless network, a first parameter for each of a plurality of radio bearers [bearers 1, 2, 3 and 4] of a user equipment (UE), wherein each of the plurality of radio bearers [bearers 1, 2, 3 and 4] is associated with a channel;
 - [b] sending, by the wireless network, an allocation message for an uplink resource to the UE;
 - [c] receiving, by the wireless network, data from the plurality of radio bearers [bearers 1 and 2] in response to the allocation message, wherein allocation of resources for the data of each channel of a radio bearer having a second parameter above zero is provided before another channel's data for transmission having a third parameter less than or equal to zero; and
 - [d] wherein the second parameter is derived from a first channel's first parameter and the third parameter is derived from a second channel's first parameter.
14. The method of claim 12, wherein the received data includes data of others of the plurality [bearers 3 and 4] of radio bearers.

In step 12[a], the wireless network sends a parameter for “each of a plurality of radio bearers” to a UE. In a system with four bearers, those four bearers would constitute the plurality of radio bearers, and a parameter must be sent for each one of them.

In Step 12[b], the system sends an allocation message advising the UE how much data it can upload. That message might or might not provide sufficient resources to the UE to send all of the data in all four bearers.

In Step 12[c], the UE then determines which data from which bearers to send, giving priority based on the whether the parameters are above zero or not. It may well be that the

system lacks the resources necessary to handle all of the data in all of the bearers, in which case it would not receive data from some of the bearers. For instance, the system might use the parameter prioritization technique to give first priority to bearer 1, second priority to bearer 2, and refrain from sending data for bearers 3 and 4. Importantly, Step 12[c] requires that data be received from “the plurality of radio bearers” as a whole, not from “each of the plurality of radio bearers” as in Step 12[a] or “each channel” as prescribed later in step 12[c].

Claim 14 makes receipt of data from “others” of the plurality of radio bearers. While claim 12 covers, for instance, a plurality consisting of just two radio bearers, claim 14 requires at least three. This embodiment is illustrated in Figure 6 of the ‘018 Patent. *See* ’018 Patent at 11:64–12:01 (“there may be multiple queues below the minimum. In this scenario, any spare resources are allocated first to any other queues that are below the minimum, as shown in step 665” (emphasis added)). While the claim must be parsed to understand its meaning, one of skill in the art would understand the claim, which is not indefinite.

E. “the single physical channel” — ’828 Patent, claims 1, 8, 15, 22, 29, and 36

IV’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, a channel capable of carrying an allocation of a scheduled uplink resource and a TPC command	<u>Claims 1 and 15:</u> “the same physical channel on which the UE receives the allocation of a scheduled uplink resource and a TPC command” <u>Claims 8 and 22:</u> “the same physical channel on which the circuitry is configured to receive the allocation of a scheduled uplink resource and a TPC command” <u>Claim 29:</u> “the same physical channel on which the network device sends the allocation of a scheduled uplink resource and a TPC command” <u>Claim 36:</u> “the same physical channel on which the circuitry is configured to send the allocation of a scheduled uplink resource and a TPC command”

There does not appear to be any dispute between the parties that “the single physical

channel” derives antecedent basis from a preceding step or element in each of claims 1, 8, 15, 22, 29 and 36, involving sending or receiving “on a single physical channel . . . if accumulation is enabled, an allocation of a scheduled uplink resource and a TPC command” to be accumulated with other TPC commands. ’828 Patent, cls. 1, 8, 15, 22, 29, and 36 (emphasis added).

Defendants’ proposed construction is vague in its use of the word “same.” Assuming that “same” is meant to emphasize that the channel is also a “single” channel whereby two different things (*i.e.*, “an allocation of a scheduled uplink resource and a TPC command”) may possibly be sent on the “same” channel, that is consistent with the patent specification. *See id.* at 12:44-49. Indeed, the patent explains that the “single physical channel” was something “new” because unlike prior art systems that used separate channels to carry allocation information and TPC commands, the “single physical channel” is at least capable of carrying both of them together, thereby providing an advantage of reduced “signaling overhead.” *See id.* at 12:39-54.

“Same,” could also be interpreted to contemplate that the “single physical channel” be used to carry allocation information and TPC commands in both the claimed mode where “accumulation is enabled” as well as the alternative claimed mode where “accumulation is not enabled.” However, the patent specification is clear that these two modes are never active at the same time, and so while the “single physical channel” can be used in either mode, that physical channel would not be the “same” in terms of the time or mode in which it is used.

Moreover, the asserted claims impose different requirements on use of the “single physical channel” in the two modes where “accumulation” is, and is not, enabled. In the first mode where “accumulation is enabled,” the claims require that the “single physical channel” carries both “an allocation of scheduled uplink resource and a TPC command.” But in the second mode where “accumulation is not enabled,” the claims only require that the “single

physical channel” carries “an allocation of scheduled uplink resource” and leave open whether or not a TPC command is also sent on the “single physical channel.” *Id.* at Abstract, 12:44-54. So, “the single physical channel” must only be “*capable of* carrying an allocation of a scheduled uplink resource and a TPC command.” *See id.*

F. “receiving [receive] . . . if accumulation is not enabled, an allocation of a scheduled uplink resource to transmit data at a power level calculated by the UE based on the path loss” /“receiving [receive] . . . if accumulation is not enabled, an allocation of a scheduled uplink resource to transmit data to the wireless network at a power level calculated by the UE based on the path loss” / “sending [send] . . . if accumulation is not enabled, an allocation of a scheduled uplink resource to transmit data to the network device at a power level calculated at the UE based on the path loss” — ’828 Patent, claims 1, 8, 15, 22, 29, and 36

IV’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, (no negative limitation required)	Plain and Ordinary Meaning; “[receiving/receive/sending] . . . if accumulation is not enabled an allocation of a scheduled uplink resource to transmit data to the wireless network at a power level calculated by the UE based on the path loss and without using a TPC command”

The dispute concerning this term centers on one issue; whether the claims permit sending or receiving a TPC command in the mode when “accumulation is not enabled.” IV’s answer is emphatically yes because the claims are noticeably silent on whether or not a TPC command may be sent or received in this mode. Defendants’ proposed construction, by contrast, inexplicably adds a negative limitation to each claim purporting to require that no TPC command can be sent or received when “accumulation is not enabled.” *See ’828 Patent, cls. 1, 8, 15, 22, 29, 36.*

The Federal Circuit has cautioned against this type of narrowing the scope of a claim when the “additional negative limitation finds no anchor in the explicit claim language” or

specification. *Omega Eng'g, Inc. v. Raytek Corp.*, 334 F.3d 1314, 1322 (Fed. Cir. 2003) (finding that the “phrase added by the district court finds no support in the text of the claims”); *Linear Tech. Corp. v. Int'l Trade Comm'n*, 566 F.3d 1049, 1060 (Fed. Cir. 2009) (finding “no basis in the patent specification for adding the negative limitation”). Negative limitations should not be adopted absent “clear disavowal, disclaimer, or estoppel.” *Paltalk Holdings, Inc. v. Microsoft Corp.*, 2008 WL 4830571, at *18 (E.D. Tex. July 29, 2008).

If the inventor wished to add such a negative limitation, he could have, but plainly did not. And if such a negative limitation was important, or even contemplated, by the inventor, it would be mentioned somewhere in the patent specification, but it isn’t. Defendants’ construction seeks to read a limitation from thin air into the claims.

G. “transmit a broadcast channel in an orthogonal frequency division multiple access (OFDMA) core-band” — ’641 Patent, claim 1

IV’s Proposed Construction	Defendants’ Proposed Construction
Plain and ordinary meaning, transmitting a broadcast channel, wherein the entire channel is contained within an orthogonal frequency division multiple access (OFDMA) core-band”	“transmit a broadcast channel, wherein the entire broadcast channel is contained within the OFDMA core band and provides essential radio control channels and a set of data channels in the core band to maintain basic radio operation”

As an initial matter, Defendants do not dispute the language of IV’s construction— Defendants’ construction adopts essentially all of IV’s language. The only dispute is regarding the multiple additional limitations that Defendants have tacked on to the end of the agreed language that have no support in the intrinsic evidence.

IV’s construction of plain meaning comports with the plain language of the claim term, which describes ***where a broadcast channel is located with respect to the core band***: “in an orthogonal frequency division multiple access (OFDMA) core-band”. ’641 claim 1. Indeed, the

Patent Trial and Appeal Board considered the same claim term in the context of the ancestor '431 patent and came to the same conclusion—that this term means that the entire broadcast channel is located within an OFDMA core-band. Ex. 8 (Final Written Decision, *Ericsson Inc., et al. v. Intellectual Ventures II LLC*, IPR2015-01664, Paper 24 (P.T.A.B. Feb. 8, 2017)) at pp. 8-9. The remaining portions of the claim at issue (claim 1) extensively describes a core band as being located at a center frequency, including a first plurality of subcarrier groups, comprising a frequency segment with a bandwidth not greater than the smaller operating channel bandwidth, and having the same value for a plurality of operating channel bandwidths:

wherein the **core-band** is substantially centered at an operating center frequency and the **core-band** includes a first plurality of subcarrier groups, wherein each subcarrier group includes a plurality of subcarriers, the **core-band** defined as a frequency segment with a bandwidth that is not greater than a smallest operating channel bandwidth among a plurality of operating channel bandwidths, the **core-band** having a same value for the plurality of operating channel bandwidths . . .

'641 claim 1 (emphasis added). IV's construction also encompasses a preferred embodiment which describes transmitting the broadcast channel in the core band wherein the core band is substantially centered at a center frequency:

A core-band, substantially centered at the operating center frequency, is defined as a frequency segment that is not greater than the smallest operating channel bandwidth among all the possible spectral bands that the receiver is designed to operate with.

[...]

In another embodiment, the system provides the bandwidth information via downlink signaling, such as using a **broadcasting channel** or a preamble. When entering into a VB network, the mobile stations **will scan the spectral bands of different center frequencies** in which the receiver is designed to operate **and decode the bandwidth information contained in the broadcasting channel** or preamble.

'641 Patent, 4:66-5:4 and 6:23-30 (emphasis added).

By contrast, Defendants' construction lacks support in the intrinsic evidence. Defendants add limitations requiring that "the entire broadcast channel ... provides essential radio control channels and a set of data channels in the core band to maintain basic radio operation." *See* Defs.' Construction. However, there is not a single embodiment described anywhere in the specification where **the broadcast channel** provides essential radio control channels and a set of data channels in the core band to maintain basic radio operations. Indeed while the specification provides exemplary embodiments of core bands that include example essential control channels (one of which may be a broadcast channel) and example data channels, nowhere in the specification is the broadcast channel itself described as containing these additional channels. '641 Patent, 5:7-17. Also, Defendants' construction lacks antecedent basis, as it references "**the** OFDMA core-band," and changes the plain claim language of claim 1 ("**an** orthogonal frequency division multiple access (OFDMA) core-band"). '641 claim 1. Therefore, Defendants' construction should be rejected.

To the extent Defendants' construction was actually a poorly drafted attempt to construe the definition of core-band, such that Defendants intended to require the **core-band** to contain "essential radio control channels and a set of data channels [...] to maintain basic radio operation," this construction should still be rejected. It would be a classic example of attempting to improperly read limitations into the claim from an embodiment—in this case from a single embodiment described at '641 Patent 5:7-17:

In one embodiment relevant or essential radio control signals such as preambles, ranging signals, bandwidth request, and/or bandwidth allocation are transmitted within the CB. In addition to the essential control channels, a set of data channels and their related dedicated control channels are placed within the CB to maintain basic radio operation. Such a basic operation, for example, constitutes the primary state of operation. When entering into the network, a mobile station starts with the primary state and transits to the normal full-bandwidth operation to include the sidebands for additional data and radio control channels.

Id. at 5:7-17 (emphasis added). Defendant are trying to import a single embodiment into the claim, which contradicts claim construction rules and even the definition provided by the PTAB during the Ericsson IPR. The plain language of claim 1 of the '641 patent is clear: the broadcast channel must be located within the core-band, but the core-band need not contain all or any other additional control channels or data channels. *See* '641 claim 1 (“transmit a broadcast channel in an orthogonal frequency division multiple access (OFDMA) core-band”).

IV. CONCLUSION

For the foregoing reasons, IV respectfully requests that the Court adopt IV’s proposed constructions for each of the disputed terms.

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The undersigned hereby certifies that the foregoing document was filed electronically in compliance with Local Rule CV-5(a). As such, this notice was served on all counsel of record who have consented to electronic service as this district requires in accordance with Local Rule CV-5(a)(3)(A). Pursuant to Fed. R. Civ. P. 5(d) and Local Rule CV-5(d) and (e), all other counsel of record not deemed to have consented to electronic service were served with a true and correct copy of the foregoing by email on this 14th day of September, 2018.

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